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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/988,647 | 11/20/2001 | Kyu Takada | 018656-249 | 8854 |

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James A. LaBarre
BURNS, DOANE, SWECKER & MATHIS, L.L.P.
P.O. Box 1404
Alexandria, VA 22313-1404

EXAMINER

ASSAF, FAYEZ G

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2872

DATE MAILED: 01/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,647

Applicant(s)

TAKADA ET AL.

Examiner

Fayez G. Assaf

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-29 is/are allowed.
- 6) ☒ Claim(s) 30 is/are rejected.
- 7) ☒ Claim(s) 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

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DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 11/24200.

Drawings Objection

Figure 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

The error in the number of the document JP 2000-199813 has been corrected. A copy of the corrected PTO-1449 form is attached.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claim 30 is rejected under 35 U.S.C. 102(b) as being anticipated by the admitted prior art disclosed in the instant application.

Figure 4 has been described by the Applicant as a conventional diffractive element (page 8, line 14 to line 15). Further, Applicant discloses (on page 3-5, line 17 of page 3 to line 3 of page 5) a substrate having a diffraction grating formed by series of depressions in a surface of said substrate, each of said depressions having a predetermined depth (G), and a dielectric film (53) on said surface of the substrate, comprising a plurality of layers of different kinds (53a and 53b) arranged in a periodic manner, said layers having a thickness such that the predetermined depth is an integral multiple of one period of the layers (as shown in the Figure).

Allowable Subject Matter

Claims 1-29 are allowed.

Claim 31 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1-6 are allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest the dielectric multiplayer film conforming to the

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diffraction grating, wherein the layers included in the dielectric multiplayer film are arranged such that only the same kind of layers are continuous across the level difference of the diffraction grating as set forth in the claimed combination.

Claims 20-23 are allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest the second step of forming the dielectric multiplayer film that conforms to the diffraction grating on the surface of the substrate so that only the same kind of dielectric layers included in the dielectric multiplayer film are continuous across the level difference of the diffraction grating as set forth in the claimed combination.

Claims 24-29 are allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest the dielectric film conforming to the diffraction grating, wherein the film comprising multiple layers of different kinds of dielectric layers wherein at least some of the individual layers are continuous across plural successive depressions and projections of the diffraction grating as set forth in the claimed combination.

Claims 7-19 are allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest the combination of the multilayer film being continuous

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across the level difference of the diffraction grating and having a size that is an integral multiple of a thickness of one period of the dielectric multiplayer film as set forth in the claimed combination.

Claim 31 is allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest the different kind of layers satisfying the condition: $2/n_0 = m(1/n_1 + \dots + 1/n_j)$ as set forth in the claimed combination.

Response to Arguments

Claims 1-6, 24-29 and 31 are allowable. As such, all arguments pertaining to these claims are moot.

Applicant's arguments regarding claim 30 have been fully considered but they are not persuasive. Applicant argues that the predetermined depth illustrated in Figure 4 is not an integral multiple of one period of the layers. The Examiner respectfully disagrees, because the language of the claim does not require the optical thickness of the predetermined depth being an integral multiple of one period of the layers as being argued. The admitted prior art shown in figure 4 discloses the predetermined depth (G) being $\lambda/2$ and the thickness of one period of layers (53a and 53b) being $\lambda/2$ as well.

Conclusion

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THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fayez G. Assaf whose telephone number is (571) 272-2307 which will be replacing the (703) 306-5526 number commencing on 1/20/2004. The examiner can normally be reached on 8-5 M-F.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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Fayez Assaf

1/11/04



DREW DUNN
SUPERVISORY PATENT EXAMINER